

AD-A209 758

DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION Unclassified			1b. RESTRICTIVE MARKINGS		
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; Distribution unlimited		
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE					
4. PERFORMING ORGANIZATION REPORT NUMBER(S) 33-89			5. MONITORING ORGANIZATION REPORT NUMBER(S)		
6a. NAME OF PERFORMING ORGANIZATION US Army-Baylor University Graduate Program in Health Care		6b. OFFICE SYMBOL (if applicable) Admin/ESHA-IHC	7a. NAME OF MONITORING ORGANIZATION		
6c. ADDRESS (City, State, and ZIP Code) Ft. Sam Houston, TX 78234-6100			7b. ADDRESS (City, State, and ZIP Code)		
8a. NAME OF FUNDING/SPONSORING ORGANIZATION		8b. OFFICE SYMBOL (if applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER		
8c. ADDRESS (City, State, and ZIP Code)			10. SOURCE OF FUNDING NUMBERS		
			PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO.
			WORK UNIT ACCESSION NO.		
11. TITLE (Include Security Classification) FACTORS ASSOCIATED WITH STUDENT STRESS IN THE US ARMY - BAYLOR UNIVERSITY GRADUATE PROGRAM IN HEALTH CARE ADMINISTRATION					
12. PERSONAL AUTHOR(S) MAJ Monte Robert Watson					
13a. TYPE OF REPORT Study		13b. TIME COVERED FROM Jul 85 TO Jul 86		14. DATE OF REPORT (Year, Month, Day) Aug 85	
				15. PAGE COUNT 67	
16. SUPPLEMENTARY NOTATION					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP	Health Care, Student Stress		
19. ABSTRACT (Continue on reverse if necessary and identify by block number)					
<p>This study defined the relationship of environmental factors, individual characteristics, and the levels of stress during the US Army - Baylor University Graduate Program in Health Care Administration. The students were administered several measurement instruments throughout their two years of study. The results suggested a number of considerations regarding conduct of the Baylor program. The author addressed them in two general areas: 1. Academic Issues; Provision of extensive feedback on performance, spreading out significant paper and examination deadlines, and provide faculty-student feedback sessions. 2. Prevention, Identification, and Intervention for Students at Risk; Early administration of assessment instruments for stress reactions, stress management sessions should be expanded to include time management and relaxation techniques, and spouses and family members should be encouraged to attend stress management sessions to enhance the family support structure.</p>					
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION		
22a. NAME OF RESPONSIBLE INDIVIDUAL Lawrence M. Leahy, MAJ, MS			22b. TELEPHONE (Include Area Code) (512) 221-6345/2324		22c. OFFICE SYMBOL HSHA-IHC

FACTORS ASSOCIATED WITH STUDENT STRESS
IN THE
U.S. ARMY - BAYLOR UNIVERSITY GRADUATE PROGRAM
IN HEALTH CARE ADMINISTRATION

By

Monte Robert Watson

Major, Army Medical Specialist Corps

A Graduate Research Project
Submitted in Partial Fulfillment of
the Requirements for the Degree of
Master of Health Care Administration

August 31, 1985



Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

ACKNOWLEDGEMENTS

My sincere appreciation is given to CPT Fred Garland for the numerous helpful comments given to this fledgling researcher during the early struggle to identify the scope of this project. I thank Colonel Joseph Constable for his reinforcement^A of the need for further research in this, as yet poorly understood, management arena. My undying gratitude is offered to the sixty-six Baylor students who took time out from their demanding and stressful studies to respond to my lengthy questionnaires^A and tests. Finally, no few words can express my heartfelt love and thanks for my wife, Linda, and my children, Matthew and Rebecca, for their continuous support, love, prayers, and assistance during the graduate program and the prolonged completion of this work.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	ii
LIST OF TABLES	v
I. INTRODUCTION	1
Description of the Setting	1
Rationale for the Study	4
II. REVIEW OF THE LITERATURE	5
III. STATEMENT OF RESEARCH	12
Purpose	12
Assumptions	12
Limitations of the Study	13
Hypotheses of Interest Tested	14
IV. Research Methodology.	16
Sample and Setting	16
Protection of Human Rights	16
Design of the Study	17
Treatment of Data	19
V. FINDINGS AND DISCUSSION	20
Sample Characteristics	20
Comparison of Class Samples	22
Correlation Analysis	25
Changes in the Test Scores Over Time	30
Type A Behaviors and Perceived Stress	33
Academic Probation and Perceived Stress	34
Sources of Stress and Adaptation	35

VI.	CONCLUSIONS AND RECOMMENDATIONS	40
	Implications for the Graduate Program In	
	Health Care Administration	40
	Academic and Environmental Issues	40
	Prevention, Identification, and Intervention	
	For Students at Risk	41
	Implications for Future Research	43
	Conclusions	46
VII.	REFERENCES	48
VIII.	APPENDICIES	53
	TAB A Information Sheet	53
	TAB B Background Data Questionnaire	54
	TAB C Social Readjustment Rating Scale	55
	TAB D Glazer Self Test for Type A Personality	56
	TAB E Rotter Locus of Control	57
	TAB F Maslach Burnout Inventory	61
	TAB G Whaler Physical Symptoms Inventory	65
	TAB H Stress Events Questionnaire	66
	TAB I Mailing Cover Letter	67

LIST OF TABLES

Table	Page
1. T-Test Comparisons Of First and Second Year Students	24
2. Chi-Square Comparisons of First And Second Year Students	24
3. Correlation Matrix For Background and Stress Measures	28
4. T-Test Comparisons of Hi-LOC and Lo-LOC Sample Scores On The MBI, GTA, and WPS	29
5. T-Test Comparisons of Initial And Retest Scores On The MBI, GTA, and WPS - 1st Year Class	32
6. T-Test Comparisons of Initial And Retest Scores On The MBI, GTA, and WPS - 2nd Year Class	32
7. Stressors Identified by First Year Students	37
8. Specific Academic Subjects As Stressors - 1st Year	37
9. Stressors Identified by Second Year Students	38
10. Specific Academic Subjects As Stressors - 2nd Year	38
11. Sources of Stress Adaptation Support - First Year Students	39
12. Sources of Stress Adaptation Support - Second Year Students	39

I. INTRODUCTION

Description of the Setting

The U. S. Army-Baylor University Graduate Program in Health Care Administration (HCA) is a graduate program consisting of a 12-month didactic phase, conducted at the U. S. Army Academy of Health Sciences (Medical Field Service School), Fort Sam Houston, Texas; and a 12-month residency phase, conducted at a variety of military medical treatment facilities within the United States and in Europe. Successful completion of the course results in the awarding of the degree of Master of Health Care Administration.

The program is a highly-sought-after and prestigious course which attracts a large number of officers from the Army, as well as several from the Navy and Air Force. Graduates of the program are considered to be much more competitive than non-graduates for promotion and assignment to higher-level positions in the medical administrative hierarchy of the Armed Forces. Because of the limited number of positions available there is a high degree of competition among the candidates. Individuals who apply for enrollment in the program must pass a rigid screening process including a military long-term education selection board in their respective branches of service, which reviews records of academic and military performance and the recommendations of superiors, and

an academic admissions screening board of the Baylor University Graduate School.

Upon enrollment in the program, the student finds himself under a high level of expectation to complete the course successfully. Failure to do so is considered tantamount to future failure in one's military career. The tie between performance in the academic program and job security within the Armed Forces is considered be a significant stressor for most of the students, is one of the primary incentives which drives the students' performance, and increases competition within an already highly-competitive military system.

Academic probation is imposed on any new student who did not have an undergraduate grade point average (GPA) of 2.70 or higher, or did not obtain a Graduate Record Exam (GRE) score 1000 or a GMAT score of 500 or more. Subsequently all students are required to obtain and maintain an overall 3.00 GPA or be placed on academic probation. Students are allowed to remain in a probationary status for only one semester before dismissal from the graduate curriculum.

The program of instruction is very rigorous and compressed. The didactic phase of the program consists of sixty (60) graduate semester hours of instruction covering a wide spectrum of subjects to include health care organization and administration, economics, statistics, operations research, systems analysis, financial and human resource management, legal issues, ethics, automated information management systems, and others. The residency phase consists of a series of administrative work rotations within the

various departments and services of a medical facility under the supervision of a senior officer, usually the hospital's chief executive officer (or Deputy Commander for Administration). During the residency phase each student is required to complete one major systems research project and a graduate research project, which approximates a thesis.

Since both phases of the program are conducted in the military setting, the students must continue to meet all the requirements of military service during the course, such as physical training and fitness standards, uniform and appearance standards, annual performance evaluation reports, and other administrative requirements. In addition, the students are required to repeatedly reestablish living arrangements due to a minimum of two permanent changes in duty station within twenty-four months.

Due to the factors mentioned above, the course is considered by many in the military medical community to be one of the most demanding and stressful graduate programs in health care administration in the nation.

Rationale for the Study

During the 1983-84 academic year, the Baylor faculty, recognizing a need to provide some "stress management training" to the students, incorporated a four-hour instructional block providing some background information on the concept of stress, exposure to some self-assessment tools, and information on the availability of local counseling resources. This information was felt to be of very little value by the students. More specific stress management sessions and sessions for the students' spouses were planned, but were never scheduled.

During the course of the academic year, significant evidence of unfavorable stress responses was manifested among the students. A high incidence of "cold and flu symptoms," complaints of sleep disturbances, headaches, "family pressures," gastrointestinal and other somatic problems, and general anxiety reactions were reported by the students. On several occasions, "explosive" confrontations broke out between classmembers and between ~~classmembers~~ and the faculty. There appeared to be a need to analyse the specific factors associated with these unfavorable stress responses in the HCA students in order to better identify the targets for planning future stress management efforts.

II. REVIEW OF THE LITERATURE

Stress and burnout are terms which have become popularized in recent years. The recent popularization of these terms does not distract from the fact that they address real conditions which can have significant negative impact on one's physical and mental health. Stress is defined generally in terms of the degree of response or accommodation necessary to adapt to stressors (changes or demands) in one's internal or external environment. Because the responses of different individuals to the same "stressor" can vary markedly, it has been long recognized that stress is an entity which cannot be measured directly. It is generally inferred from physiological measurements or from self-report measures of various kinds.

Hans Selye (1974), called by many "the father of modern stress research," defined stress as "the nonspecific response of the body to any demand made upon it." Selye (1956, 1974) developed the theory of the "general adaptation syndrome" (GAS) or "biological stress syndrome" to describe the responses of living organisms to stressors. He also developed the concept that "adaptation energy" can be exhausted with prolonged exposure to stressors resulting in a decay of health and changes in behavior.

Stress is something that most people have come to recognize as part of the American lifestyle. The literature is replete with studies of the role which stress plays in the development of illnesses such as heart attack, cancer, hypertension, and ulcers.

A number of researchers have studied the relationship of stress and health.

From their studies of the recent life histories of a large population of Navy personnel who had reported for sick call at a Naval dispensary, Holmes and Rahe found that a large number of them had experienced a significant degree of life change during the months preceeding their illnesses. From these histories, Holmes and Rahe (1967b) developed the Social Readjustment Rating Scale (SRS), which was designed to measure the amount of relative adaptation required by an individual experiencing certain life change events. High scores on the SRS were found to be predictive of both minor and major health changes. (Rahe et al, 1967a)

Jenkins (1971, 1976) studied the psychological and sociological precursors of coronary disease. In cooperation with Rosenman and Friedman (1965) he developed the *Jenkins Activity Survey* which has been widely used to differentiate between the Type A coronary-prone behavior patterns and Type B noncoronary-prone behavior patterns. Rosenman and Friedman (e.g., Friedman, 1969) delineated the chief components of the Type A behavior pattern: a high achievement motivation, a persistent sense of the urgency of time, and poorly controlled feelings of hostility.

In a study using the *Jenkins Activity Survey*, Manuck and Garland (1979) found that when Type A and Type B student subjects were given an experimental task to do with an attached incentive, there was no significant difference between their task performance levels or their self-reported anxiety, but that when no incentive

was attached to the task, the Type B personalities performed at a lower level. Their results suggest that environmental factors or stressors, such as the inherent career-related rewards attached to health care administration students' performance, may mitigate or exacerbate Type A behavioral responses in students. Other studies have added to the evidence that these behavior patterns are relatively flexible and responsive to situational factors. (Glass, 1977)

Glazer developed the *Self Test for Type A Personality* (GTA) -- which is based on the Jenkins Survey -- to provide a quick, reliable, group-administered measure of Type A behavioral tendencies. This tool has been shown to provide a reliable measure of self-reported Type A behavior in studies of soldiers and middle managers in Army cavalry units. (Watson, 1983a and 1983b)

Phares (1973) and Rotter (1961, 1966) studied the personality determinants of behavior, specifically the construct, locus of control, which can be defined as the set of individual beliefs about the environment and its impact on one's behavior or performance. Rotter developed an instrument, the *Rotter Locus of Control* (LOC), which provides a measure of the degree to which an individual believes that events in his/her life are controlled externally, "...as a result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him..."; or "...contingent upon his own behavior or his own relatively permanent characteristics." (1965)

Phares (1962) studied the differences in the perceptual thresholds for a series of electrical shock stimuli between two groups of subjects who were given different expectations. One group (skill group) was told that they could avoid the shock through their skill at correctly pressing a series of buttons while the other group was told that the shock might occur regardless of their skill (chance group). Phares concluded that subjects who felt they had control of the situation [internal locus of control] were better able to cope with the potentially threatening situation [or perceived less stress] than subjects who felt chance or some uncontrollable forces controlled their success.

Linn and Zeppa (1984) found that junior medical students who reported more external locus of control on the Rotter scale were more likely to experience unfavorable stress than those who reported a more internal locus of control.

The relationship of experienced stress and physical symptom complaints has been well established. Wahler (1968, 1983) developed the Wahler Physical Symptoms Inventory (WPS), a forty-two item inventory of common physical symptoms which provides a means of quantifying experienced somatic symptoms at a given point in time. By comparing the individuals obtained score with his present physical health and with the decile ranks obtained by samples of normal students and psychiatric clients the evaluator is able to differentiate between symptoms which are of physical (focused) origin and those which are of psychogenic (diffuse) origin. Previous studies using the WPS have shown it to

be a valid measure of experienced physical symptoms in student populations. Whaler found that the WPS scores were not effected by the age or the sex of the subjects.

The term "burnout" was first formally introduced into the literature by Freudenberger (1974) who used it to describe the condition which he called "staff burnout syndrome" in his study of "front-line human service workers." The term did not appear in the titles of articles indexed in the Cumulative Index to Nursing and Allied Health Literature until 1978. By 1980, there was an explosion of articles indexed under this separate heading. Muldary (1983) points out that burnout is really "a causal term rather than a technical one." It is a term which has significant communicative value because it denotes a condition which is commonly recognized by a variety of people. Burnout appears to be related conceptually to the third stage of Selye's GAS model, the stage of exhaustion, where one's adaptive energy is depleted and one is no longer able to cope effectively with the stressors present. It is the reponse of a person to prolonged exposure to unfavorable stress.

Christina Maslach (1981) developed the Maslach Burnout Inventory (MBI) which provides a measure of three specific factors identified in the professional burnout syndrome; emotional exhaustion, depersonalization, and feelings of a lack of personal accomplishment. The development of the tool was based upon extensive research by the author and her associates, Pines and Jackson, during the period 1976 to 1980, with lawyers, policemen, social workers, mental health workers, health care workers, and

other professional groups who had been deemed prone to burnout. The MBI requires the subject to report the frequency and intensity of experience associated with twenty-two item scale.

Constable (1983) used the MBI in his study of the mitigating influences of social support systems and the work environment upon experienced burnout in a population of nursing personnel assigned to a military medical treatment facility. Corley (1983) studied the effects of demographic variables including sex, marital status, age, and the presence of other family members in the living environment upon burnout as measured by the MBI. The test has been shown to have high test-retest reliability and validity in studies of students, military medical professionals, and numerous other professional groups to include administrators of health agencies.

Muldary (1983) states that the "burgeoning literature [related to burnout in health care workers] has not yet provided a complete picture of the phenomena" but "consists of numerous perfunctory articles and a range of unsubstantiated opinions concerning the etiology, symptomatology, and control of burnout." Veninga (1979), Vash (1980), and Numerof (1983) have studied the effects of stress and burnout in health care administrators. The literature abounds with studies of stress in populations of nursing personnel (e.g. Sutterly and Donnelly, 1981; Constable, 1983).

Our understanding of burnout and stress in allied health students, using Muldary's description, "is grounded mainly on impressions, anecdotal evidence, and comparisons with other

helping professions." (1983) David Mechanic published observational studies of students' responses to stress as early as 1962. His 1978 capstone work, *Students Under Stress*, presented a study of the social psychology of adaptation among students. Several authors have reported observational studies of nurses and nursing paraprofessionals in training. (Garret, 1976; Linn, 1975) Observational studies of stress among medical students and residents have been reported by Mitchell et al (1983), Gaensbauer (1980), and Berg and Garrard (1980).

Heins, Fahey, and Leiden (1984) compared the perceived stress in populations of medical, law, and other graduate students. Using a survey approach, they identified six separate factors pertaining to sources of stress among graduate students: academic concerns, fear of failing, time concerns, classroom interactions, economic issues, and world issues.

To date the writer is not aware of a single published article describing these phenomena in a group of graduate-level health care administration students -- let alone a systematic research study.

III. STATEMENT OF RESEARCH

Purpose

The purpose of this descriptive study was to define the relationship of selected environmental factors, individual student characteristics, and the levels of perceived and experienced stress reported by students during the U. S. Army-Baylor University Graduate Program in Health Care Administration. In addition, the study was to identify, using a survey approach, the sources of students' perceived stress and the inherent sources of adaptation employed by these students.

Assumptions

In designing the study, four assumptions were made concerning the relationships of the variables under study:

1. It was assumed that the degree of stress inherent in the didactic phase of the program does not vary significantly from year to year. It was further assumed that the experiences of the second-year students would be reflective of those which the first-year students would experience during the same phase of their academic program.
2. The biographical background data and the effects of locus of control were assumed to remain relatively stable and to exert a continuous modifying influence on the students' stress over the

course of the study period.

3. The *Maslach Burnout Inventory* and the *Whaler Physical Symptoms Inventory* were assumed to measure phenomena that are secondary results of unfavorable stress exposure, and that would vary among students over time.

4. It was assumed that drawing observations of students during two distinctly different periods in the Baylor Program; entry-level through the mid-point in the didactic phase, and finalization of the didactic phase through the initial residency phase, would provide valuable data regarding changes in the students' experience of and response to stress during the program.

Limitations of the Study

Data collection was limited to the first two didactic semester's for the first-year students, and the fourth didactic semester and first residency semester for the second-year students. This limits the writer's ability to make predictions concerning the students' experience of unfavorable stress or burnout across the entire academic continuum.

The initial series of stress scales were group-administered and returned to the author through local distribution upon completion. The second series of stress scales drawn from the students during the study period required mail survey and return. The lack of environmental control over

the second administration may have resulted in increased variation in measurements compared to those which were been obtained in the more controlled initial administration.

No data was available for the second year students who had been dismissed or had withdrawn from the program prior to initiation of the study. One first year student who took the first series of tests was unavailable for follow-up due to withdrawal from the program. These factors may have skewed the study results toward survivors and limited its application to those who fail to survive.

As the academic component of the students' experience is so integrally associated with the military social and environmental components, its individual impact as a stressor could not be adequately assessed. This limits the application of study findings to non-military graduate programs in Health Care Administration.

Hypotheses of Interest Tested

Although the data and the study design provided a large number of hypotheses to be tested, the following working hypotheses were established apriori based on the literature review and the author's clinical experience and interest:

1. Student's reported stress levels on the MBI and the WPSI will change in relationship to the amount of exposure or time in the Baylor academic environment. The second mean scores of first year

students will be higher than their initial mean scores. Likewise, second year students in the residency phase will have lower mean scores than they did during their last didactic phase semester.

2. Students who entered the program on academic probation will demonstrate higher initial mean scores on the MBI and the WPSI than students who did not enter on academic probation.

3. Students who score 250 or more points on the SRS -- the cut-off score indicated in the literature as indicative of significant risk for stress-related illness -- will have higher initial mean scores on the MBI emotional exhaustion subscales and the WPSI than students who score less than 250 points.

4. The GTA scores will be directly affected by the amount of exposure to the didactic phase. The mean second semester GTA scores of first-year students will be higher than their mean first semester scores. The mean residency phase GTA scores of second-year students will be lower than their mean didactic phase scores.

5. Students with a high external locus of control -- those with a LOC score greater than 1 standard deviation above the mean for the population under study -- will exhibit higher initial mean GTA scores than those with a more internal locus of control -- a LOC score greater than 1 standard deviation below the mean.

6. Students with a high external locus of control -- those with a LOC score greater than 1 standard deviation above the mean for the study population -- will exhibit higher initial mean MBI and WPSI scores than those with a more internal locus of control -- a LOC score greater than 1 standard deviation below the mean.

IV. RESEARCH METHODOLOGY

Sample and Setting

The subjects chosen for study were drawn from two consecutive classes in the U.S. Army-Baylor University Graduate Program in Health Care Administration, the classes of 1983-85 and 1984-86. The population under study consisted of a convenience sample of sixty-six students, thirty-three members from each of the two classes. First year students were assigned to the didactic phase of the program during both testings. The second year students were assigned to the didactic phase of the program during the initial testing and were reassigned to thirty different medical treatment facilities for their residency phase several weeks prior to their follow-up testing. All data for this study was collected during the period July 1, 1984 to February 15, 1985. The test instruments were administered shortly after the midpoint of two consecutive semesters.

Protection of Human Rights

Prior to the initiation of the study, all participants were given an information sheet which described the study purpose and methodology, listed the mechanisms used to insure the privacy of information provided to the writer, and informed them that their participation was strictly voluntary. (See Appendix A) The writer personally presented the information and answered any questions

presented at that time. Each subject was assigned a random three-digit identity number which allowed the writer to differentiate between the members of the two classes and to track the responses of individual subjects during the study.

Design of the Study

This study was a descriptive and correlational study designed to define the demographic, and certain situational and personality characteristics of a population of students, and relate these factors to measures of experienced stress. A number of measurement instruments and questionnaires were used as described below.

A simple biographical background questionnaire was group-administered to each class at the beginning of the study period. (See Appendix B) The Holmes and Rahe *Situational Readjustment Rating Scale* (SRS), the *Blazer Self-Test for Type A Personality* (GTA), and the *Rotter Locus of Control* (LOC) were group-administered to both classes early in the first semester of the study period. The *Maslach Burnout Inventory* (MBI) and the *Mahler Physical Symptoms Inventory* (WPS) were group-administered to both classes shortly after the midpoint of first semester under study. The scales were individually administered to those not present for the group administration.

The SRRS, GTA, MBI, and WPSI were retested shortly after the midpoint of the following semester. The scales were mailed out to the home addresses of each participant with written

instructions and pre-addressed stamped return envelopes.

Follow-up mailings were sent out to all subjects who had not returned the surveys within thirty days of initial mailing.

During the second test period the students were requested to complete an open-ended Delphi-like survey to identify those situations, events, or requirements associated with the academic program which were most frequently reported to be perceived as stressors. They were also asked to identify the persons or methods which were of greatest assistance in combatting stress during the previous semester.

Treatment of Data

The dichotomous (yes or no, male or female, etc.) responses to the biographical background questionnaire were numerically coded for analysis. The raw scores of each of the standardized measures were used in the data analysis.

The statistical analysis was performed on a Tandy Radio Shack Model 16B microcomputer utilizing the *Trajectories* statistical processing system software, version 4.0, developed by DATA BASICS, Incorporated. This package provided for database management, data matrix manipulation, and all necessary statistical analyses. (Southeast Technical Associates, Inc., 1983)

V. FINDINGS AND DISCUSSION

The data included in this study was obtained from a convenience sample of two consecutive classes in the U. S. Army - Baylor University Graduate Program in Health Care Administration. The total number of students involved in the study was sixty-six with an equal distribution between the two classes. A one hundred percent return rate was obtained for the background questionnaires and the initial personality and situational stress measures. A ninety-seven percent ($n = 64$) return rate was obtained from the first administration of the MBI and WPS scales. A ninety-five percent ($n = 63$) return rate was obtained for the second test/survey administration, which had been mailed out to the participants. One student, who returned the second test, failed to complete one of the included scales.

Sample Characteristics

An analysis of the demographic data for the two-class sample of health care administration graduate students revealed the following profile. The population consisted of fifty-three male and thirteen female officers ranging in military pay grade from O-2 to O-5, with the median pay grade of O-3. The students had completed between four and eighteen years of active military service, with a mean of ten years and a standard deviation of 3.4 years time in service (TIS). They reported hospital or health care work experience (HEX) ranging from zero to eighteen years,

with a mean of 4.9 years and a standard deviation of 5.1 years. The students ranged in age from twenty-seven to forty-four years, with a mean age of 32.8 years and a standard deviation of 4.0 years.

The Graduate Record Exam (GRE) scores ranged from a score of 940 to a score of 1550 points (combined verbal and math scores), with a mean score of 1148 points and a standard deviation of 135 points. The students reported undergraduate grade point averages (GPA) ranging from 2.33 to 3.97 on a scale of 4.0 points. The mean GPA was 3.09, with a standard deviation of 0.39 points. Fifteen of the students were placed on probationary status upon entry into the program due to failure to meet the entrance standards noted earlier -- eight in the first year class and seven in the second year class. Eighteen of the students had obtained a graduate degree prior to enrollment.

Fifty-seven of the sixty-six students were married and nine were single. Fifty of the students reported at least one child living at home. Three of the married students were living separately from their spouses due to military assignment conflicts -- two in the first year class, and one was in the second year class.

Comparison of Class Samples

The class (sample) mean ages, mean time in service (TIS), mean years of hospital experience (HEX), mean scores on the Graduate Record Exam (GRE), and the mean undergraduate grade point averages (GPA) were computed. The two class means for each of these factors were subjected to a t-test of the hypothesis of the equality of sample means, using a 95 percent confidence interval. The proportions of students in each class who were male or female, married or single, living with their children or not, and who did or did not possess a prior graduate degree were subjected to a Chi-square test of homogeneity of sample proportions, using a 95 percent confidence interval. The assumption of homogeneity between the two classes was considered established for the purposes of this study if for all the factors analyzed the hypothesis of equality of means or proportions could not be rejected at the level noted above. The results of hypothesis testing of the observed differences in the background characteristics of the two classes under study are presented in Tables 1 and 2.

No significant difference (95 percent confidence interval) was noted between the two samples with regard to any of the measures listed in Table 1 or Table 2. The relatively greater difference in their mean ages represented a variance of slightly more than one year, or only .39 years when corrected for their age at the beginning of the graduate program. The observed difference in the mean scores on the *Social Readjustment Rating Scale* may

be attributed in part to the fact that the second year students were reporting the life change factors related to their involvement in the graduate program during the previous 12 months. The only factor approaching significance in Table 2 was the proportion of married and single students in the respective classes.

TABLE 1

T-Test Comparisons Of First And Second Year Students

Item	First Year		Second Year		t-score/D.F.	Signi- ficance
	Mean	S.D.	Mean	S.D.		
AGE (Years)	32.09	3.794	33.48	4.124	1.1812 / 64	*
HEX (Years)	4.788	4.729	5.121	5.389	.2671 / 64	*
TIS (Years)	9.970	3.566	10.454	3.364	.5681 / 64	*
GPA (4.0 Scale)	3.105	.4332	3.077	.3613	.2901 / 64	*
GRE Score	1135.9	118.58	1155.5	150.4	.5853 / 64	*
GTA Score #1	96.55	13.30	94.67	18.77	.4692 / 64	*
LOC Score	9.094	3.246	8.750	4.399	.3556 / 62	*
SRS Score	220.8	121.51	251.5	76.25	1.2162 / 63	*

* C.V. of t ($\alpha = .05$, 60 D.F.) = 2.0003
 The hypothesis of equality of sample means cannot
 be rejected at the .05 level of significance.

TABLE 2

Chi-square Comparisons Of First And Second Year Students

Proportion or Ratio	First Year	Second Year	Chi-Sqr Value / D.F.	Signi- ficance
Male/Female	25 / 8	28 / 5	.8621 / 1	*
Married/Single	26 / 7	31 / 2	3.2163 / 1	*
With/With out Children	23 / 10	27 / 6	1.32 / 1	*
With/With out Graduate Degree	8 / 25	10 / 23	.3055 / 1	*

* C.V. of Chi-Square ($\alpha = .05$, 1 D.F.) = 3.841
 The hypothesis of equality of sample proportions cannot be
 rejected at the .05 level of significance.

Correlation Analysis

As noted above, the two classes of students showed no significant differences with regards to any of the demographic or other background characteristics. The data from the two classes was combined for the purposes of correlation analysis.

Pearson product moment correlation coefficients (r) were computed to analyze the interrelationships of reported unfavorable stress, the individual demographic characteristics, and pretest environmental and personality measures. The fifteen variables included were age, time in service (TIS), hospital/healthcare experience (HEX), the GRE score, undergraduate GPA, the LOC score, the SRRS score, the GTA score, the six initial MBI subscale scores, and the WPS scores. Factors found to be correlated, $r = \pm .25$ or greater and $p = .05$ or less, were considered significantly associated. The results of this analysis are presented in matrix form as Table 3.

A moderately strong positive correlation, $r = .287301$ ($p < .05$), was noted between students age and the *Situational Readjustment Rating Scale* (SRS). This finding suggests that older students tended to have experienced more life change than younger students. The results of this analysis may have been influenced by the relatively higher SRS scores of the second year students who were on average 1.39 years older than the first year students. (See Table 1)

A very strong positive correlation, $r = .425807$ ($p < .001$), was observed between the SRS score and the *Mahler Physical*

Symptoms Inventory (WPS). This finding is consistent with the relationship of high SRS scores to higher incidence physical illnesses or complaints, which is well-established in the literature. (Holmes, 1967; Rahe, 1967, 1968) It was hypothesized by the author that the WPS scores of students scoring more than 250 life change units on the SRS would be significantly higher than those of students scoring less than 250 life change units on the SRS. A t-test of the hypothesis of equal group means revealed a significant difference ($t = 2.01613$, 60 D.F., $p < .05$). The mean WPS scores of a sample of students scoring more than one standard deviation above the overall group mean on the SRS was significantly higher than those of a group scoring more than one standard deviation below the mean ($t = 3.1928$, 14 D.F., $p < .001$). These findings further corroborate the strong relationship between the *Situational Readjustment Rating Scale* and the presence of physical complaints as measured by the *Mahler Physical Symptoms Inventory*.

The GRE scores demonstrated a strong negative correlation ($.001 < p < .01$) with four of the six subscales of the *Maslach Burnout Inventory* (MBI), emotional exhaustion frequency (EF), emotional exhaustion intensity (EI), depersonalization frequency (DF), and depersonalization intensity (DI). This suggests that students with higher GRE scores exhibited a lower degree of feelings related to these components of the burnout syndrome. No significant relationship was established between the GRE and the frequency or intensity subscales related to feelings of personal accomplishment (PF and PI).

The *Rotter Locus of Control* (LOC) showed a moderately strong positive relationship ($p < .05$) with the three subscales of the MBI; EI, DF, DI. This suggests that students with a more external locus of control experienced greater feelings of emotional exhaustion and depersonalization. A moderately strong negative correlation ($p < .05$) was noted between the LOC and the PF and PI subscales of the MBI, suggesting that students with a more external locus of control experienced a lesser sense of personal accomplishment. The relationship between the *Rotter Locus Of Control Scale* and the *Maslach Burnout Inventory* subscales was further established by the a t-test of two samples, one scoring more than one standard deviation above the group mean on the LOC and one scoring more than one standard deviation below the mean. The hypothesis of equality of group mean scores was rejected for five of the six subscales. See Table 4.

The intercorrelations of the six subscales of the MBI were consistent with the findings of Maslach et al. (1981). The PF and PI subscales demonstrated significant negative correlation with the EF, EI, DF, and DI subscales ($p < .05$). The intensity and frequency subscales for each major subscale of the MBI correlated very highly ($r = .679054$ to $.823526$, $p < .001$).

TABLE 3

Correlation Matrix For Background and Stress Measures

var.	age	T28	HR	QW	QW	QW1	QW2	LOC	WFL	ELL	WFL	DILL	WFL	PILL	WFL
Pearson Product Moment (r) * p < .05 ** p < .01 *** p < .001															
age	1	.081796 ***	.561541 ***	-.156481	-.164118-03	.287981	.0160977	-.186111	-.141975	-.161746	-.166484	-.026439	.12989	5.61618-03	-.061135
T28	.081796 ***	1	.38396 **	-.143282	-.064913	-.064833	.0622289	-.194188	-.131116	-.168875	-.0749286	.0139641	.198756	.0088619	-.0047608
HR	.561541 ***	.38396 **	1	.0817772	-.0776882	.151246	-.164385	.0817186	-.178642	-.182544	.0421388	.0813496	.0842774	.036248	-.0411026
QW	-.156481	-.141282	.0817772	1	.14116	-.0715119	-.126889	.0289129	.164813	.088886	.198974	.225428	-.13675	-.141587	.0236823
QW	-.164118-03	-.064913	-.0776882	.14116	1	.144982	-.081235	-.0875652	-.125995	-.113942	-.127568	-.282254	.0135498	5.198418-03	-.0237928
QW1	.287981	-.064833	.151246	-.0715119	.144982	1	.0448152	-.134179	-.0828216	-.0785136	.0287447	.0421386	.17295	.128995	.428887 ***
QW2	.0160977	.0622289	-.164385	-.126889	-.081235	.0448152	1	-.0935883	.03751	.0714877	.0289754	.0884387	.111538	-5.479618-03	-.0648135
LOC	-.186111	-.194188	.0817186	.0289129	-.0875652	-.134179	-.0935883	1	.221878	.278829	.276482	.235643	-.388231	-.361772	-.112217
WFL	-.141975	-.131116	-.178642	.164813	-.125995	-.0828216	.03751	.221878	1	.762594	.695289	.478774	-.311488	-.463887	.198813
ELL	-.161746	-.168875	-.182544	.088886	-.113942	-.0785136	.0714877	.278829	.761596	1	.47867	.58819	-.276438	-.23433	.0882778
WFL	-.166484	-.0749286	.0421388	.198974	-.127568	.0287447	.0289754	.276482	.695289	.47867	1	.623526	-.321675	-.32481	.0795481
DILL	-.026439	.0139641	.0813496	.225428	-.282254	.0421386	.0884387	.235643	.478774	.58819	.623526	1	-.279893	-.361773	.088479
WFL	.12989	.198756	.0842774	-.13675	.0135498	.17295	.111538	-.388231	-.311488	-.276438	-.321675	-.279893	1	.679954	.084104
PILL	5.61618-03	.0088619	.036248	-.141587	5.198418-03	.128995	-5.479618-03	-.261972	-.463887	-.23433	-.32481	-.261773	.679954	1	.0428304
WFL	-.061135	-.0047608	-.0411026	.0236823	-.0237928	.428887 ***	-.0648135	-.112217	.198813	.0882778	.0795481	.088479	.084104	.0428304	1

TABLE 4

T-Test Comparisons of Hi-LOC And Lo-LOC Sample Scores
On The MBI, GTA, and WPS

Item	Low - LOC		High - LOC		t-score/D.F.	Signi- ficance
	Mean	S.D.	Mean	S.D.		
MBI-EF Scale	16.50 /	9.26	25.22 /	13.75	1.6377 / 17	*
MBI-EI Scale	21.00 /	10.21	32.56 /	15.87	1.9085 / 17	p<.05
MBI-DF Scale	4.2 /	3.29	10.56 /	7.10	2.5510 / 17	p<.025
MBI-DI Scale	6.1 /	4.41	12.67 /	8.97	2.0592 / 17	p<.05
MBI-PF Scale+	35.9 /	7.49	25.67 /	10.57	2.4552 / 17	p<.025
MBI-PI Scale+	40.1 /	8.21	32.89 /	14.70	1.3389 / 17	*
GTA	96.88 /	17.82	100.55 /	14.35	.4977 / 17	*
WPS	.66 /	.19	.94 /	.53	.9589 / 17	*

* Unable to reject the hypothesis of no difference
between the means at the 95 percent confidence level
C.V. of t = 1.7396 (1-tailed t-test)

+ Lower scores on these scales indicate higher unfavorable
stress.

Changes in Test Scores Over Time

The class mean MBI subscale, the GTA, and the WPS scores obtained during the two testing periods were compared to determine the degree of change in these factors over time. A t-test was performed on the difference between the initial and retest class means on each of the instruments, using a 95 per cent confidence interval as the decision factor for statistical significance. The results of this analysis are summarized in Tables 5 and 6.

It was hypothesized by the author that the mean MBI and WPS scores of the the first year students would be higher -- indicating more unfavorable stress -- on the follow-up test than on the initial test. Although the actual changes in five of the six MBI subscale scores did indicate this trend, only one subscale achieved the desired level of significance. The mean WPS scores of these students showed a slight decrease in the degree of physical complaints reported, though this did not achieve the level of significance desired.

The mean MBI and WPS scores of the second year students were hypothesized to be lower upon transfer to the residency phase. Four of the six MBI subscales; EF, EI, DF, DI, showed a statistically significant decrease in unfavorable stress. The other two MBI scales, PF and PI, showed a moderate decrease in unfavorable stress, but did not achieve the desired level of significance. (On the PF nad PI scales, lower scores denote a higher degree of unfavorable stress) The WPS scores showed a statistically significant decrease in physical complaints ($p < .05$).

The changes in the students' responses to stress noted above may be reflective of the influence of the degree of exposure to academic environmental stressors, or of a developmental trend in the individual student's responses to their environment, all other things being equal. Of particular interest was the fact that the second year students manifested a significant reduction in unfavorable stress after leaving the didactic phase and entering the residency phase of the program. This adds weight to the assumption that the didactic phase is quite stressful.




TABLE 5

T-Test Comparisons of Initial And Retest Scores
On The MBI, GTA, and WPS - 1st Year Class

Item	First Period		Second Period		t-score/D.F.	Signi- ficance
	Mean	S.D.	Mean	S.D.		
MBI-EF Scale	21.53	9.09	23.29	11.43	.6770 / 61	*
MBI-EI Scale	28.65	10.28	29.32	11.74	.2399 / 61	*
MBI-DF Scale	7.38	4.56	8.29	6.33	1.9308 / 61	p<.05
MBI-DI Scale	9.22	5.81	10.64	6.64	.9080 / 61	*
MBI-PF Scale+	32.09	9.23	29.52	9.83	1.0732 / 61	*
MBI-PI Scale+	36.47	7.72	33.90	9.11	1.2066 / 61	*
GTA	96.5	13.3	96.6	9.2	.0347 / 62	*
WPS	.69	.23	.54	.27	1.2140 / 61	*

* Unable to reject the hypothesis of no difference
between the means at the 95 percent confidence level
C.V. of t = 1.6707, D.F. = 63 (1-tailed t-test)

+ Lower scores on these scales indicate higher unfavorable
stress.

TABLE 6

T-Test Comparisons of Initial And Retest Scores
On The MBI, GTA, and WPS - 2nd Year Class

Item	First Period		Second Period		t-score/D.F.	Signi- ficance
	Mean	S.D.	Mean	S.D.		
MBI-EF Scale	25.41	14.35	17.97	10.27	2.3843 / 62	p<.025
MBI-EI Scale	17.34	11.82	11.06	6.09	2.6771 / 62	p<.001
MBI-DF Scale	7.16	6.21	3.31	3.37	3.3899 / 62	p<.001
MBI-DI Scale	10.66	8.19	6.13	7.13	2.3607 / 62	p<.025
MBI-PF Scale+	31.44	9.92	34.94	6.98	1.6321 / 62	*
MBI-PI Scale+	38.00	10.46	39.59	6.18	.7417 / 62	*
GTA	94.67	18.77	92.91	12.28	.4460 / 63	*
WPS	.66	.29	.45	.09	1.9578 / 61	p<.05

* Unable to reject the hypothesis of no difference
between the means at the 95 percent confidence level
C.V. of t = 1.6707, D.F. = 61 (1-tailed t-test)

+ Lower scores on these scales indicate higher unfavorable
stress.

Type A Behaviors and Perceived Stress

The class mean scores on the *Glazer Self Test for Type A Personality* (GTA) for both classes fell in the middle of the "cardiac prone", Type A2 range. The lowest score obtained from the sample still fell within the mixed Type AB range. (See the rating scale for this test attached at Appendix C.) The distribution of the scores was negatively skewed. The median and mean scores were nearly equal. These factors indicate that the group as a whole tended toward Type A behavior.

It was hypothesized that the GTA scores of the first year students would increase over time in the program, and the scores of the second year students would decrease after transfer to the residency phase. No significant difference was noted for either of the classes ($t = .4456$, 63 D.F. and $t = .0346$, 62 D.F.).

It was hypothesized that students with a highly external LOC (greater than one standard deviation above the mean) would exhibit higher GTA scores than those with a more internal LOC (less than one standard deviation below the mean). No statistically significant difference was noted between the group mean scores ($t = .4977$, 17 D.F.).

No significant difference was noted between the mean MBI subscale scores or the mean WPS scores for two samples of students drawn from the extremes of the GTA score distribution, those with a GTA score greater than one standard deviation above the mean and those with a GTA score less than one standard deviation below the mean (t values were all less than 1.09, D. F. 23)

A t-test of the hypothesis that the test and retest GTA scores of the students would differ significantly could not be supported by the data (See Tables 5 and 6.). There was no significant change in either class over the period of the study.

Academic Probation and Perceived Stress

It was hypothesized that the students on academic probation would have higher stress scale scores than those not on probation. There was no significant difference between the mean MBI or WPS scores for students on academic probation or those off academic probation. The score on the emotional exhaustion subscales of the MBI approached significance for a one-tailed t-test with 61 degrees of freedom. The t-value for the EF and EI scales were 1.5989 and 1.4783 respectively. The samples were small for this comparison, but the effects of academic probation on perceived stress in the students could not be established at the level of significance desired for this study. It is important to note that the undergraduate GPA scores had no significant relationship with the other items analysed in Table 3. As previously noted the GRE scores demonstrated a strong negative correlation with the emotional exhaustion and depersonalization subscales of the MBI, indicating that the students with higher GRE scores tended to experience fewer of the unfavorable stress symptoms measured by these scales.

Sources of Stress and Adaptation

The subjects' responses to the Delphi questionnaire were subjectively categorized to eliminate semantically similar categories and a frequency ranking was determined for each class separately. The categorization of responses on each questionnaire was done by two individuals separately and all differences were discussed before assigning a response to a particular category. The ten most frequently reported items identified by the students on the survey as sources of stress and stress adaptation assistance were determined to be major sources during the period evaluated. In addition, the specific subjects identified by the students as stressors were ranked according to frequency. The data is presented in Tables 7 through 12.

Although the data did not lend itself readily to correlative statistical analysis because of the open-ended survey approach used for its collection, the level of agreement between the responses of the two classes was remarkable.

The two classes agreed on eight out of ten of the general sources of stress. Several of the general areas identified as stressors by the Baylor students are listed among the top eight stressors identified by junior medical students in a study by Linn and Zeppa. (1984) Of note was the fact that both classes identified four of the same specific subjects as stressors, all given in the first two semesters of the didactic phase, as primary stressors, even though the second year students had completed all

four of the didactic phase semesters. These courses; financial management, statistics, epidemiology, and economics were primarily quantitative in nature.

There was similar agreement on the sources of stress adaptation employed by the students, eight of the top ten factors listed. Support from family and peers and time away from studies were ranked among the top three by each class. Family and peer support were also identified as significant stress buffers by Constable (1983), Corley (1983), and Heins et al. (1984).

TABLE 7

Stressors Identified By First Year Students*1

Source of Stress	Frequency of Response*2
Family/Marital Conflicts or Changes	21
Written Requirements (Composition)	16
Term Papers, Essays	
Poor Quality of Instruction	14
Preparation, Attitudes (Degradation),	
Ambiguity (Expectations)	
Excessive Workload (Readings)	12
Overlapping Deadlines	
Insufficient Study Time	10
Requirement for Group Work	9
Excessive Time, Poor Match of	
Personality and Skills	
Lack of Feedback on Performance	8
Insufficient Personal or Family Time	7
Written Examinations	6
Midterms and Finals	
Anxiety Regarding PCS Assignments/Moving	5

TABLE 8

Specific Academic Subjects As Stressors - First Year 1

Subject	Frequency of Response*2
Financial Management (Case Studies)	13
Statistics	7
Economics	6
Epidemiology	5
Organizational Theory and Behavior	5

1 Reporting Period Includes First and Second Semesters

2 n = 31

TABLE 9

Stressors Identified By Second Year Students *1

Source of Stress	Frequency of Response*2
Comprehensive Oral Examinations	17
Written Requirements (Composition)	17
GRPP, Term Papers	
Preparation for Moving/PCS	15
Family/Marital Conflicts or Changes	13
Excessive Workload (Readings)	11
Overlapping Deadlines	
Poor Quality of Instruction or	11
Conflict With Instructors	
Inadequate Personal or Family Time	10
Insufficient Study Time	8
Military Demands - Uniform, PT, Weight	8
Personal Desire to Succeed or Performance	7
Dissatisfaction	

TABLE 10

Specific Academic Subjects As Stressors - 2nd Year*1

Subject *2	Frequency of Response
Financial Management (Case Studies)	8
Economics	5
Quality Assurance/Risk Management	5
Statistics/Epidemiology	4
Operations Research	2

*1 Students' Reports Include Fourth Semester and
Residency Transition Period

*2 n = 32

TABLE 11

Sources Of Stress Adaptation Support - First Year Students

Source	Frequency of Response*1
Support from Classmates - Cohesion	18
Time Away - Breaks, Outside Interests	16
Support from Family, Spouse, Significant Others	14
Support from Faculty - Handouts, Reviews, Tutoring	12
Regular Exercise - Aerobics, Running	11
Self Confidence - Successes, Experience, Goal Readjustment	9
Specific Support of Counselors, or Program Director	6
Church, Prayer, Religion	5
Group Study - Outlines, Reviews	5
Time Management, Goal Setting	5

TABLE 12

Sources Of Stress Adaptation Support - Second Year Students

Source	Frequency of Response*2
Support from Family, Spouse, or Significant Others	24
Time Away from Work Leave, Social or Outside Interests	22
Support from Classmates, Peers, Alumni	17
Regular Exercise - Running	14
Faculty or Preceptor Support	11
Religion, Prayer, Church	9
Self Confidence, Experience, Successes, Attitude Readjustment	9
Time Management, Goal Setting	5
Individual vs Group Projects	3
Professional Counseling	2
1 n = 31	2 n = 32

VI. CONCLUSIONS AND RECOMMENDATIONS

Implications for the Graduate Program In Health Care Administration

The study results suggest a number of areas of consideration with regard to the conduct of the Baylor program. These considerations can be addressed in two primary areas: academic and environmental issues; and methods for the early identification, intervention, and prevention of unfavorable stress outcomes.

Academic and Environmental Issues

Because the students showed such a strong tendency toward Type A behaviors, the faculty would be advised to play down the element of competition between students. In addition, provision of a significant amount of direct, immediate, and constructive feedback on individual performance would appear to be of value in alleviating the students' anxiety regarding their needs for success. Further, great care should be taken in insuring that the deadlines for major examinations and papers are spread out to limit the students' already strong time urgency concerns.

The students identified a number of specific sources of stress related to the academic environment in the program. The common sources of environmental stress identified by the students were the excessive workload, limited time for study and personal needs, the writing requirements, examinations (both oral and

written), and conflicts between their personal needs for success and limited feedback on performance. These have been identified as consistent concerns for other groups of graduate students. (Heins et al., 1984)

The students perceived that the faculty were often distant, somewhat ambiguous in their expectations as to the students' performance, occasionally degrading or condescending in attitude, or in an adversarial relationship with the students. At the same time the students championed certain members of the faculty for their provision of additional tutorial support, and for their one-on-one support as individual instructors and counselors. Additional emphasis on enhanced faculty-student interaction and communication appears to be needed. Regular joint faculty-student feedback sessions should be encouraged. As practicable, considering the time constraints on the faculty, the counselor-student relationship should be maximized. In a study of medical school faculty members, a total of only 48.6 minutes per week was reported to be spent counseling students. (Brown and Barnett, 1984) Berg and Garrard (1980) identified informal counseling relationships between staff or faculty and medical residents as a frequent source of support.

Prevention, Identification, and Intervention For Students at Risk

Early administration of some standard tools by behavioral science professionals for the assessment and identification of

students at risk for unfavorable stress should be considered. This study provides some insight into the value of the tools used as potential screening and assessment devices. The GRE scores appear to be a valid tool for identifying those at risk for unfavorable stress reactions. It is suggested that the Holmes and Rahe *Situational Readjustment Rating Scale* be used early in the academic year to identify those who are at risk for adverse physiological responses to stress due to an overload of life change. The cutoff score of 250 points appears to be a valid score for differentiating between those at risk and those not at risk. Although further research is needed to more clearly identify the relationship of the *Rotter Locus of Control* and unfavorable stress responses, the tool shows value in identifying a group at potential risk, those with a high external locus of control. The *Glazer Self Test for Type A Personality* did not differentiate between high and low stress groups and should not be considered for screening purposes, but it does provide a quick means of feedback to students regarding their Type A behavioral tendencies.

The *Maslach Burnout Inventory* proved to be a valid measure of burnout or unfavorable stress reactions among the health care administration graduate students. The mean scores of the present population compared closely with those of the population upon which the test was standardized ($n = 2,118$), with the HCA students scoring slightly below the mean of the standard population on all of the scales. The MBI could be given early in the year and repeated at intervals to identify adverse changes in

the students. The *Wahler Physical Symptoms Inventory* proved to be a complex tool which did not correlate significantly with any of the MBI subscales.

The stress management sessions initiated during the past two years should be continued, and expanded to include training in two additional areas, time management and relaxation techniques. This recommendation is based on the identification by the students of time pressures as major stressors, and the relatively high frequency of responses regarding the importance of exercise as a method of tension release. The work of Alan Lakein, as described in his book *How to Get Control Of Your Time And Your Life*, provides a simple approach to this complex problem. Herbert Benson, M.D., describes an easily understood and learned method of relaxation in his book *The Relaxation Response*.

Spouses and family members should be strongly encouraged to attend similar stress-management sessions. Family-related conflicts and changes were listed as significant sources of stress. The family was also seen as a major source of support by the students. Enhancing this important support system is an essential strategy.

Implications for Further Research

The results of this study raise a number of additional questions or areas for further research.

Additional research is needed regarding the interactive


effects of a number of the variables which were used to include measures of Type A personality, the Holmes and Rahe *Situational Readjustment Rating Scale*, GRE scores, age, and prior hospital experience. The *Rotter Locus Of Control* shows some potential as a tool to identify some of the students at risk for unfavorable stress reactions and its value may be even greater when studied in interaction with other variables. As an example, Linn and Zeppa (1984) found that students with a highly external LOC combined with low self-esteem experienced more unfavorable stress. The data already collected may be used in these studies but consideration should be given to adding to the sample from future classes with measurements taken at the same time periods during the program that the present data was drawn.

It would be helpful to repeat the study done by Corley (1983) regarding the relationship of age, sex, marital status, and the presence of dependents in the home environment to experienced burnout with this population of graduate health care administration students. These studies should include an examination of the interactive effects of these variables on students' experience of unfavorable stress during the program. The data already collected could be used in this effort. Corley's work with professional nurses confirms some of the conclusions concerning these relationships from earlier studies using the MBI and tends to refute others (Maslach and Jackson, 1981).

The undergraduate GPA showed very little direct relationship with the other measures used in this study. Many of the faculty have verbally discounted its value in predicting the success of

candidates in the graduate program, stating that most of the candidates had completed several years of successful adult work between their undergraduate experience and their enrollment in the graduate program. It would be valuable to develop some measure of demonstrated adult work-related knowledge and skill for correlation with both academic performance and experienced stress during the program. Additionally it would be valuable to explore the interrelationship of the students' actual academic performance and experienced stress.

The responses to the Delphi survey could be used with additional iterations to develop a survey tool for identification of stressors in this and other health care graduate programs. The development of such a tool could follow the methodology used by Heins et al. (1984) An alternative study approach would be to use the Heins instrument on the students in the Baylor program and compare the results with the populations of medical, law, and other graduate student which Heins studied.



Conclusions

The study identified that many of the students enrolled in the U. S. Army - Baylor University Graduate Program in Health Care Administration do experience a significant degree of unfavorable stress. The level of unfavorable stress experienced does appear to be related in part to the high intensity of academic demands as well as the related demands of the military vocational environment with its strong emphasis on competitiveness and its subordinating influence upon family-related and personal interests.

E. M. Gherman, M.D. (1981) outlines the enormous costs associated with stress related illnesses and injuries, to include premature employee deaths and the costs of recruiting and training replacements, related disability payments and medical bills, and the large percentage of work accidents [or in hospitals, stress-generated treatment errors]. J.E. Yates (1979) cites an old study published by the U.S. Clearinghouse for Mental Health Information which listed a \$17 billion annual decrease in U.S. Industry productivity caused by stress-related mental health disorders, and an estimated \$60 billion annual loss in productivity as a result of stress-related physical illnesses. In the health care industry, where the employee productivity factor is the primary source of continued financial viability due to the pressures of cost containment and where stress-related treatment errors can result in very costly malpractice claims, the

importance of stress management cannot be overstated.

The U.S. Army - Baylor University Graduate Program provides a unique high-stress environment where the faculty can assist the students in not only developing more effective personal coping skills, but in developing strategies for implimentation of corporate stress management programs in their future assignments as health care administrators. The effectiveness of such a program will be directly related to the amount of research, planning, resources, and time which is invested in this critical management arena.

REFERENCES

Books

- Benson, H.B. *The Relaxation Response*. New York: Avon Books, 1976.
- Daniel, W.W. *Biostatistics: A Foundation For Analysis In The Health Sciences*. third ed., New York: John Wiley and Sons, 1983.
- Friedman, M. *Pathogenesis of Coronary Artery Disease*. New York: McGraw-Hill, 1969.
- Gherman E.M. *Stress and the Bottom Line: A Guide to Well-Being and Corporate Health*. New York: AMACOM, 1981.
- Glass, D.C. *Behavior Patterns, Stress, and Coronary Disease*. New York: Lawrence Erlbaum Associates, 1977.
- Lakien, A. *How To Get Control of Your Time and Your Life*. New York: David McKay, Inc., 1973.
- Maslach, C. *Burnout -- The Cost of Caring*. New York: Prentice Hall, 1982.
- Mechanic, D. *Students Under Stress: A Study in the Social Psychology of Adaptation*. New York: Free Press, 1962, 1978.
- Muldary, T.W. *Burnout and Health Professionals: Manifestations and Management*. Norwalk, Connecticut: Appleton-Century-Crofts, 1983.
- Numerof, R.E. *Managing Stress: A Guide for Health Professionals*. Rockville, Maryland: Aspen Systems Corporation, 1983.
- Phares, E.J. *Locus of Control: A Personality Determinant of Behavior*. Morristown, N.J.: General Learning Corporation, 1973.
- Selye, Hans. *The Stress of Life*, New York: McGraw-Hill, 1956 (revised ed., 1975).
- Selye, Hans. *Stress Without Distress*. New York: Lippincott and Crowell, Publishers, 1974.
- Sutterly, D.C. and Donnelly, G.F. *Coping With Stress: A Nursing Perspective*. Rockville, Maryland: Aspen Systems Corp., 1981.

Vash, Carolyn. *The Burnt-Out Administrator*. New York:Springer Publishing Company, 1980.

Yates, J.E. *Managing Stress*. New York: AMACOM, 1979.

Journal Articles

Berg, J.K. and Garrard, J. "Psychosocial Support in Residency Training Programs." *Journal of Medical Education*. 55:851-857, 1980.

Brown, J.C. and Barnett, J.M. "Response of Faculty Members To Medical Students' Personal Problems." *Journal of Medical Education*. 59:180-187, 1984.

Constable, J.F. "The Effects of Social Support and the Work Environment Upon Burnout Among Nurses." A thesis submitted to the Graduate College of The University of Iowa, 1983.

Corley, E.C. "The Relationship of Burnout to the Sex of the Nurse". A thesis submitted to the Graduate Program in Nursing, University of South Carolina, 1983.

Freudenberger, H.J. "Staff Burn-out". *Journal of Social Issues*. 30:159-165, 1974.

Gaensbauer, T.J. and Mizner, G.L. "Developmental Stresses in Medical Education." *Psychiatry*. 43:60-69, 1980.

Garret, A. et. al. "Stressful Experiences Identified by Student Nurses." *Journal of Nursing Education*. 15(6):9-18, 1976.

Heins, M., Fahey, S.N. and Leiden, L.I. "Perceived Stress in Medical, Law, and Graduate Students." *Journal of Medical Education*. 59:169-179, 1984.

Holmes, T.H., and R.H. Rahe. "The Social Readjustment Rating Scale." *Journal of Psychosomatic Research*, 11:213-218, 1967.

Jenkins, C.D., Rosenman, R.H. and Friedman, M. "The Development of an Objective Psychological Test for the Determination of the Coronary-Prone Behavior Pattern in Employed Men." *Journal of Chronic Diseases*. 20:371-379, 1967.

Jenkins, C.D. "Psychological and Social Precursors of Coronary Disease." *The New England Journal of Medicine*. 284:244-255, 307-317, 1971.

- Jenkins, C.D. "Recent Evidence Supporting Psychological and Social Risk Factors for Coronary Disease." *The New England Journal of Medicine*. 294:987-994, 1033-1038, 1976.
- Linn, B.S. and Zeppa, R. "Stress in Junior Medical Students: Relationship to Personality and Performance." *Journal of Medical Education*. 59:7-12, 1984.
- Linn, L.S. "Primex Trainees Under Stress." *Journal of Nursing Education*. 14(2):10-19, 1975.
- Manuck, S.B. and Garland, F.N. "Coronary-Prone Behavior Pattern, Task Incentive, and Cardiovascular Response." *Psychophysiology*. 16:136-142, 1979.
- Maslach, C. and Jackson, S.E. "The Measurement of Experienced Burnout." *Journal of Occupational Behavior*. 2:99-113, 1981.
- Maslach, C. and Jackson, S.E. "Burned Out Cops and Their Families" *Psychology Today*. 12(12):59-62, 1978.
- Maslach, C. and Jackson, S.E. "Burned-out." *Human Behavior*. 5(9):16-22, 1976.
- Mitchell, R.E. et. al. "The Question of Stress Among First-Year Medical Students." *Journal of Medical Education*. 58:367-372, 1983.
- Phares, E.J. "Perceptual Threshold Decrements as a Function of Skill and Chance Expectancies." *Journal of Psychology*. 53:399-407, 1962.
- Pines, A. and Maslach, C. "Characteristics of Staff Burnout in Mental Health Settings." *Hospital and Community Psychiatry*. 29:233-237, 1978.
- Rahe, R.H., McKean, J.D., and Ransom, R.J. "A Longitudinal Study of Life-Change and Illness Patterns". *Journal of Psychosomatic Research*. 10:355-366, 1967.
- Rahe, R.H. and Ransom, J.A. "Life Change Patterns Surrounding Illness Experience." *Journal of Psychosomatic Research*. 11:341-345, 1968.
- Rotter, J.B. "The Growth and Extinction of Expectancies in Chance Controlled and Skilled Tests". *Journal of Psychology*. 52:161-167, 1961.
- Rotter, J.B. "Generalized Expectancies for Internal Versus External Control of Reinforcement." *Psychological Monographs: General and Applied*. 80(1):1-28, 1966.

- Veninga, R. "Administrator Burnout -- Causes and Cures." *Hospital Progress*. 45-52, February, 1979.
- Watson, M.R. "Identifying Correlates of Experienced Stress Among Deploying Soldiers in an Army Air Cavalry Unit." Unpublished after-action report to Health Services Command of an observational study done on Operation Bright Star 1983, Cairo, Egypt. 1983a.
- Watson, M.R. "A Battallion Stress Management Training Program." A program of instruction developed for the 4/9th Cavalry, 1st Cavalry Division, Fort Hood, Texas. 1983b.
- Whaler, H.J. "The Physical Symptoms Inventory: Measuring Levels of Physical Complaining Behavior." *Journal of Clinical Psychology*. 24:207-211, 1968.

Tests

- Glazer, H.I. *Glazer Self Test for Type A Personality* New York:EHE Stress Control Systems, Inc., 1980.
- Maslach, C. and Jackson, S.E. *The Maslach Burnout Inventory* ("Human Services Survey"), research ed. Palo Alto, California:Consulting Psychologists Press, 1981.
- Wahler, H.J. *Wahler Physical Symptoms Inventory* (1983 Edition) Los Angeles, California:Western Psychological Services, 1983.

Suggested Background Readings

- Applebaum, S.H. *Stress Management for Health Care Professionals*. Rockville, Maryland:Aspen Systems Corporation, 1981.
- Clary, T.C. and Clary E.W. "Managing Stress Before It Manages You." *Governmental Finance*. 22-29; February, 1977.
- Jacobsen, S.F. and McGrath, H.M. *Nurses Under Stress*. New York:John Wiley and Sons, 1983.
- Levinson, H. "When Executives Burn Out." *Harvard Business Review*. 59(3):73-81, 1981.
- Linn, B.S. and Zeppa, R. "Anxiety and Performance on Oral Examination." *Social Science and Medicine*. 15:211-214, 1981.

McGrath, J. (ed). *Social and Psychological Factors in Stress*,
New York: Holt, Rinehart, and Winston. 1970.

Meichenbaum, D. and Jaremko, M.E. *Stress Reduction and
Prevention*. New York: Plenum Press, 1983.

Woolfolk, R.L. and Richardson, F.C. *Stress, Sanity, and
Survival*. New York: Sovereign Books, 1978.

ANNEX A

Graduate Research Project
Information Sheet

Subject: Environmental and Individual Precursors of Student Stress in the U.S. Army - Baylor University Graduate Program in Health Care Administration

Primary Researcher: Major Monte R. Watson (Baylor Class of 1983-85)
4906 El Presidio
San Antonio, TX 78233
(512) 654-4528
or HCA office 221-6443/6136 (messages)

After 17 August 84: c/o Administrative Resident
HQ, William Beaumont Army Medical Center
El Paso, TX 79920
(915) 569-2203 : AV (979)

Baylor Staff Advisors: LTC Robert Moore, COL Joseph Constable
Research Advisor: CPT Fred Garland, AHS Behavioral Science Division

Purpose: To identify organizational/environmental and personal precursors of stress in students, and to identify those contributive factors which may be lessened through management techniques.

Procedures:

1. Members of the 1983-1985 and 1984-1986 classes will be administered a brief demographic survey, a life event stress scale, a Type A/B behavior scale, and a survey measuring internal vs. external expectations for control early in the summer semester.
2. At the midpoint of the summer semester and during the midpoint of the fall semester each student will be administered scales which measure perceived or experienced stress.
3. These scales will be scored and the results (along with a general interpretation) will be made available to any student who requests to see them. Additional clinical interpretation of the scales will be provided by CPT Fred Garland, psychologist, only if specifically requested.
4. The results of the data collection above will be kept confidential at all times by the primary researcher and his advisors. All data will be assigned a random numerical code for analysis and reporting.
5. No student is under any obligation to participate in this study. Students may withdraw from the study at any time without consequence.

Your participation in this study will be greatly appreciated. It is hoped that the results of this study will lead to reduction of unnecessary stress factors and thus improvement in the graduate education experience of the present and future students enrolled in the U.S. Army - Baylor Graduate Program.

I will be available at the addresses and phone numbers above, if you have any questions regarding this research project.

ANNEX B

U.S. Army - Baylor University
Graduate Program in Health Care Administration

Graduate Research Project

Subject: Environmental and Individual Precursors of Student Stress in the U.S. Army - Baylor University Graduate Program in Health Care Administration

Primary Researcher: Major Monte R. Watson (Class of 1983-85)

Subject Background Data: The following background data is crucial to the scope of the study noted above. Your release of this information is of course strictly voluntary, and all information will be held in strict confidentiality by the researcher and his advisors.

Name: _____ Last 4 Numbers of SSN: _____

Age: _____ Sex: _____

Rank: _____ Date of Rank: _____ Primary MOS: _____

Years in Service: _____ Years of hospital experience: _____

Marital Status (S or M): _____ Do you have Children?: _____

Do the children live with you?: _____

If single, do you have a roommate and/or pets?: _____

Do you have a prior graduate degree?: _____

Optional:

Undergraduate GPA: _____ GRE Overall Score: _____

(Verbal + Quantitative)

NOTE: Please address any questions concerning this survey or the study in general to Major Watson.

ANNEX C

Social Readjustment Rating Scale

This scale measures the stress of adjusting to life change and indicates the relative energy required to adapt to each situation or life event. If an event listed below has occurred in your life during the last twelve (12) months, put a circle around the number assigned to it.

<u>Life Events</u>	<u>Life_Change_Unit</u>
Death of a spouse-	
Divorce	73
Marital separation	65
Jail term	63
Death of close family member	63
Personal injury or illness	53
Marriage	50
Fired at work	47
Marital reconciliation	45
Retirement	45
Change in health of family member	44
Pregnancy	40
Sex difficulties	39
Gain of new family member	39
Business readjustment	39
Change in financial state	38
Death of close friend	37
Change to different line of work	36
Change in number of arguments with spouse	35
Mortgage over \$10,000	31
Foreclosure of mortgage or loan	30
Change in responsibilities at work	29
Son or daughter leaving home	29
Trouble with in-laws	29
Outstanding personal achievement	28
Wife begin or stop work	26
Begin or end school	26
Change in living conditions	25
Revision of personal habits	24
Trouble with boss	23
Change in work hours or conditions	20
Change in residence	20
Change in schools	20
Change in recreation	19
Change in church activities	19
Change in social activities	18
Mortgage or loan less than \$10,000	17
Change in sleeping habits	16
Change in number of family get-to-togethers	15
Change in eating habits	15
Vacation	13
Christmas	12
Minor violations of the law	11

ANNEX D

SELF TEST FOR PERSONALITY-TYPE

As you can see, each scale below is composed of a pair of adjectives or phrases separated by a series of horizontal lines. Each pair has been chosen to represent two kinds of contrasting behavior. Each of us belongs somewhere along the line between the two extremes. Put a check mark where you think you belong between the two extremes.

1 2 3 4 5 6 7

- | | | |
|---|-----------|---|
| 1. Doesn't mind leaving things temporarily unfinished | - - - - - | Must get things finished once started |
| 2. Calm and unhurried about appointments | - - - - - | Never late for appointments |
| 3. Not competitive | - - - - - | Highly competitive |
| 4. Listens well, lets others finish speaking | - - - - - | Anticipates others in conversation (nods, interrupts, finishes sentences for the other) |
| 5. Never in a hurry, even when pressured | - - - - - | Always in a hurry |
| 6. Able to wait calmly | - - - - - | Uneasy when waiting |
| 7. Easygoing | - - - - - | Always going full speed ahead |
| 8. Takes one thing at a time | - - - - - | Tries to do more than one thing at a time, thinks about what to do next |
| 9. Slow and deliberate in speech | - - - - - | Vigorous and forceful in speech (uses a lot of gestures) |
| 10. Concerned with satisfying himself, not others | - - - - - | Wants recognition by others for a job well done |
| 11. Slow doing things | - - - - - | Fast doing things (eating, walking, etc.) |
| 12. Easygoing | - - - - - | Hard driving |
| 13. Expresses feelings openly | - - - - - | Holds feelings in |
| 14. Has a large number of interests | - - - - - | Few interests outside work |
| 15. Satisfied with job | - - - - - | Ambitious, wants quick advancement on job |
| 16. Never sets own deadlines | - - - - - | Often sets own deadlines |
| 17. Feels limited responsibility | - - - - - | Always feels responsible |
| 18. Never judges things in terms of numbers | - - - - - | Often judges things in terms of numbers (how many, how much) |
| 19. Casual about work | - - - - - | Takes work very seriously (works weekends, brings work home) |
| 20. Not very precise | - - - - - | Very precise (careful about detail) |


ANNEX E

This is a questionnaire to find out the way in which certain important events in our society effect different people. Each item consists of a pair of alternatives. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief: obviously there are no right or wrong answers.

1. A. Children get into trouble because their parents punish them too much.
B. The trouble with most children nowadays is that their parents are too easy with them.
2. A. Many of the unhappy things in people's lives are partly due to bad luck.
B. People's misfortunes result from the mistakes they make.
3. A. One of the major reasons why we have wars is because people don't take enough interest in politics.
B. There will always be wars, no matter how hard people try to prevent them.
4. A. In the long run people get the respect they deserve in this world.
B. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. A. The idea that teachers are unfair to students is nonsense.
B. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. A. Without the right breaks one cannot be an effective leader.
B. Capable people who fail to become leaders have not taken advantage of their opportunities.

7. A. No matter how hard you try some people just don't like you.
- B. People who can't get others to like them don't understand how to get along with others.
8. A. Heredity plays the major role in determining one's personality.
- B. It is one's experiences in life which determine what they're like.
9. A. I have often found that what is going to happen will happen.
- B. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10. A. In the case of the prepared student there is rarely if ever such a thing as an unfair test.
- B. Many times exam questions tend to be so unrelated to course work that studying is really useless.
11. A. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
- B. Getting a good job depends mainly on being in the right place at the right time.
12. A. The average citizen can have an influence in government decisions.
- B. This world is run by the few people in power, and there is not much the little guy can do about it.
13. A. When I make plans, I am almost certain that I can make them work.
- B. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14. A. There are certain people who are just no good.
- B. There is some good in everybody.
15. A. In my case getting what I want has little or nothing to do with luck.
- B. Many times we might just as well decide what to do by flipping a coin.
16. A. Who gets to the boss often depends on who was lucky enough to be in the right place first.
- B. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

17. A. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
- B. By taking an active part in political and social affairs the people can control world events.
18. A. Most people don't realize the extent to which their lives are controlled by accidental happenings.
- B. There really is no such thing as "Luck."
19. A. One should always be willing to admit mistakes.
- B. It is usually best to cover up one's mistakes.
20. A. It is hard to know whether or not a person really likes you.
- B. How many friends you have depends upon how nice a person you are.
21. A. In the long run the bad things that happen to us are balanced by the good ones.
- B. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. A. With enough effort we can wipe out political corruption.
- B. It is difficult for people to have much control over the things politicians do in office.
23. A. Sometimes I can't understand how teachers arrive at the grades they give.
- B. There is a direct connection between how hard I study and the grades I get.
24. A. A good leader expects people to decide for themselves what they would do.
- B. A good leader makes it clear to everybody what their jobs are.

25. A. Many times I feel that I have little influence over the things that happen to me.
- B. It is impossible for me to believe that chance or luck plays an important role in my life.
26. A. People are lonely because they don't try to be friendly.
- B. There's not much use in trying too hard to please people, if they like you, they like you.
27. A. There is too much emphasis on athletics in high school.
- B. Team sports are an excellent way to build character.
28. A. What happens to me is my own doing.
- B. Sometimes I feel that I don't have enough control over the direction my life is taking.
29. A. Most of the time I can't understand why politicians behave the way they do.
- B. In the long run the people are responsible for bad government on a national as well as on a local level.
- 

ANNEX F

On the following pages are several statements of job-related feelings you might have. Please read each statement carefully and decide if you ever feel this way about your present job. If you have never had this feeling, check the box marked "NEVER" and go on to the next statement. However, if you have experienced this feeling, indicate HOW OFTEN you feel it by circling the appropriate number on the 6-point scale. Then, decide HOW STRONG the feeling is when you experience it by circling the appropriate number on the 7-point scale. An example is shown below.

Frequency of Feeling:		HOW OFTEN				
	1	2	3	4	5	6
NEVER	A FEW TIMES A YEAR	ONCE A MONTH OR LESS	A FEW TIMES A MONTH	ONCE A WEEK	A FEW TIMES A WEEK	EVERY DAY

Intensity of Feelings:		HOW STRONG					
	1	2	3	4	5	6	7
VERY MILD, BARELY NOTICEABLE				MODERATE			MAJOR VERY STRONG

Example:

00. I feel depressed at work.

() Never HOW OFTEN: 1 2 3 4 5 6

 HOW STRONG: 1 2 3 4 5 6 7

If you occasionally feel depressed at work (say a few times a month) you would circle the number 3. If, when you do feel depressed, it is a fairly strong feeling, but not as strong as you can imagine, you would circle a 6.

* The term *recipients* refers to those receiving input from your efforts: classmates, instructors, supervisors, patients, subordinates, etc.

HOW OFTEN:	1	2	3	4	5	6
	A few	Monthly	A few	Weekly	A few	Daily
	times		times		times	
	a year		a month		a week	

HOW STRONG:	1	4	7
	Very	Moderate	Very
	mild		strong

1. I feel emotionally drained from my work.

() Never	HOW OFTEN:	1	2	3	4	5	6	
	HOW STRONG:	1	2	3	4	5	6	7

2. I feel used up at the end of the workday.

() Never	HOW OFTEN:	1	2	3	4	5	6	
	HOW STRONG:	1	2	3	4	5	6	7

3. I feel fatigued when I get up in the morning and have to face another day on the job.

() Never	HOW OFTEN:	1	2	3	4	5	6	
	HOW STRONG:	1	2	3	4	5	6	7

4. Working with people all day is really a strain for me.

() Never	HOW OFTEN:	1	2	3	4	5	6	
	HOW STRONG:	1	2	3	4	5	6	7

5. I feel burned out from my work.

() Never	HOW OFTEN:	1	2	3	4	5	6	
	HOW STRONG:	1	2	3	4	5	6	7

6. I feel frustrated by my job.

() Never	HOW OFTEN:	1	2	3	4	5	6	
	HOW STRONG:	1	2	3	4	5	6	7

7. I feel I am working too hard on my job.

() Never	HOW OFTEN:	1	2	3	4	5	6	
	HOW STRONG:	1	2	3	4	5	6	7

8. Working with people directly puts too much pressure on me.

() Never	HOW OFTEN:	1	2	3	4	5	6	
	HOW STRONG:	1	2	3	4	5	6	7

Wahler Physical Symptoms Inventory

1983 Edition

by H.J. Wahler, Ph.D.

Published by

wps

WESTERN PSYCHOLOGICAL SERVICES
Publishers and Distributors
12031 Wilshire Boulevard
Los Angeles, California 90025

Name: _____ Age: _____ Sex: M F Date: _____

WHAT YOU ARE TO DO:

Below is a list of physical troubles. Please indicate how often each of these bothers you. Do this by circling the number to the right of each trouble which shows how often you are bothered by that trouble. Keep in mind that the LARGER the number the MORE OFTEN the trouble bothers you. Please DO NOT SKIP any troubles. You may take as much time as is necessary.

	ALMOST NEVER	ABOUT ONCE A YEAR	ABOUT ONCE A MONTH	ABOUT ONCE A WEEK	ABOUT TWICE A WEEK	NEARLY EVERY DAY		ALMOST NEVER	ABOUT ONCE A YEAR	ABOUT ONCE A MONTH	ABOUT ONCE A WEEK	ABOUT TWICE A WEEK	NEARLY EVERY DAY
1. Nausea (Feeling like throwing up).	0	1	2	3	4	5	22. Paralysis (Unable to move parts of the body).	0	1	2	3	4	5
2. Headaches.	0	1	2	3	4	5	23. Trouble with eyes or vision.	0	1	2	3	4	5
3. Trouble with ears or hearing.	0	1	2	3	4	5	24. Burning, tingling or crawling feelings in the skin.	0	1	2	3	4	5
4. Neck aches or pains.	0	1	2	3	4	5	25. Skin trouble (Rashes, boils or itching).	0	1	2	3	4	5
5. Feeling hot or cold regardless of the weather	0	1	2	3	4	5	26. Feeling tired.	0	1	2	3	4	5
6. Arm or leg aches or pains.	0	1	2	3	4	5	27. Muscular weakness.	0	1	2	3	4	5
7. Shakiness.	0	1	2	3	4	5	28. Dizzy spells.	0	1	2	3	4	5
8. Swelling of arms, hands, legs, or feet	0	1	2	3	4	5	29. Muscular tensions.	0	1	2	3	4	5
9. Stuttering or stammering.	0	1	2	3	4	5	30. Any trouble with the senses of taste or smell.	0	1	2	3	4	5
10. Difficulty sleeping	0	1	2	3	4	5	31. Difficulty breathing (Short of breath, asthma, etc.).	0	1	2	3	4	5
11. Losing weight.	0	1	2	3	4	5	32. Twitching muscles.	0	1	2	3	4	5
12. Backaches.	0	1	2	3	4	5	33. Poor health in general.	0	1	2	3	4	5
13. Intestinal or stomach trouble.	0	1	2	3	4	5	34. Excessive gas.	0	1	2	3	4	5
14. Difficulty with urination (Passing water).	0	1	2	3	4	5	35. Difficulty swallowing.	0	1	2	3	4	5
15. Heart trouble.	0	1	2	3	4	5	36. Seizures (Convulsions or fits).	0	1	2	3	4	5
16. Trouble with teeth.	0	1	2	3	4	5	37. Gaining weight.	0	1	2	3	4	5
17. Numbness, or lack of feeling in any part of the body.	0	1	2	3	4	5	38. Difficulty with appetite.	0	1	2	3	4	5
18. Aches or pains in hands or feet.	0	1	2	3	4	5	39. Bowel trouble (Constipation or loose bowels).	0	1	2	3	4	5
19. Fainting spells.	0	1	2	3	4	5	40. Vomiting.	0	1	2	3	4	5
20. Excessive perspiration.	0	1	2	3	4	5	41. Chest pains.	0	1	2	3	4	5
21. Abnormal blood pressure.	0	1	2	3	4	5	42. Hay fever or other allergies.	0	1	2	3	4	5

Please write down any important physical symptoms not listed above which trouble you: _____

Copyright © 1973 by WESTERN PSYCHOLOGICAL SERVICES

Not to be reproduced in whole or in part without written permission of Western Psychological Services.
All rights reserved. 3 4 5 6 7 8 9 Printed in U.S.A.

ANNEX H

Subject ID No.: _____

List in descending order the top five (5) events, circumstances, situations, courses, or requirements which you feel most greatly added to your personal stress during the preceeding semester.

1. _____
2. _____
3. _____
4. _____
5. _____

List in descending order the top five (5) events, circumstances, situations which assisted you most in adapting to the stress of the previous semester.

1. _____
2. _____
3. _____
4. _____
5. _____

List in descending order the top five (5) events, circumstances, situations, courses, requirements which you feel most greatly added to your personal stress during the didactic phase of the graduate program.

1. _____
2. _____
3. _____
4. _____
5. _____

List any other comments you may have regarding the graduate program.

REPLY TO
ATTENTION OF

ANNEX I

DEPARTMENT OF THE ARMY
WILLIAM BEAUMONT ARMY MEDICAL CENTER
EL PASO, TEXAS 79920

17 December 1984

This Document
Reproduced From
Best Available Copy

Administrative Resident

SUBJECT: Graduate Research Study

U.S. Army-Baylor University Graduate Program
in Health Care Administration Student
Fort Sam Houston, Texas 78234-6100

Dear Fellow Student:

The attached surveys and questionnaires are being sent to you to assist me in completion of a graduate research project designed to study the effects of the Baylor program on its students. It is hoped that this research will identify problem areas which promote stress among the students at Baylor, as well as areas for potential intervention.

Your assistance in completion and mailing of the attached questionnaire is essential to my completion of this study. I appreciate the effort required to complete such a lengthy survey, but this information will be invaluable in guiding changes in the program. Please complete all pages and return to: Commander, William Beaumont Army Medical Center, ATTN: Admin Resident (MAJ Watson), El Paso, TX 79920-5001 (Telephone: AV 979-2027/2106/2203).

If you desire a copy of this study summary report, please check the appropriate block below.

I desire a copy: Yes ☐ No ☐

Name: _____

Address: _____

Thank you for your participation.

Sincerely,

Monte R. Watson
Major, SP
Administrative Resident